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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,173	02/26/2002	Thomas Thuli	34341	5126

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EXAMINER

BOUTSIKARIS, LEONIDAS

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,173

Applicant(s)

THULI ET AL.

Examiner

Leo Boutsikaris

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 11-16 is/are allowed.
- 6) ☒ Claim(s) 1 and 5-8 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6/1, 8/1 are rejected under 35 U.S.C. 102(b) as being anticipated by Nunoshita (US 4,092,060).

Regarding claim 1, Nunoshita discloses a thin film optical component (Figs. 3-4) comprising a base unit 10, a substrate 12 supported by the base unit, the substrate having an optically functionally surface (top and bottom), as substrate 12 comprises an optical waveguide (in other words, top and bottom surfaces of 12 act to guide propagation of light therewithin); and a coating 28 on the substrate 12 that extends beyond the substrate and onto the base unit 10 (lines 59-67, col. 4). Furthermore, the substrate 12 is located in predefined fashion in specific relationship to a reference of the base unit, the reference being the two plane edge surfaces on each side of the substrate 12 (lines 60-62, col. 2).

Regarding claim 6/1, the substrate 12 comprises glass and has a structured surface in the form of a ridge channel.

Regarding claim 8/1, the optical component shown in Fig. 3 is used as an optical switch (lines 53-57, col. 4).

Claims 1, 5/1, 7/1 are rejected under 35 U.S.C. 102(b) as being anticipated by King (US 4,063,268).

Regarding claim 1, King discloses an optical component (Figs. 1-2) comprising a base unit 10, a substrate 12 supported by the base unit, the substrate having an optically functionally surface (all sides above plane 11), and a coating 13 on the substrate that extends beyond the substrate and onto the base unit 10 (lines 4-18, col. 2). Furthermore, the trapezoid-shaped substrate 12 is located in a predefined fashion in a specific relationship with a reference 15 in the base unit, reference 15 having two parallel plane surfaces. It is noted that the claim language does not define the limitation "two plane reference surface" with any degree of specificity, hence mesa-shaped unit 15 reads on the above claim language.

Regarding claim 5/1, the substrate 12 and the reference 15 extend in one plane i.e., surface 11.

Regarding claim 7/1, the functional surface of the substrate 12 has the optical function of a mirror.

Allowable Subject Matter

Claims 3-4, 5/4, 6/3, 6/4, 7/3, 7/4, 8/3, 8/4, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 9, 11-16 are allowed.

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Claims 3-4, 5/4, 6/3, 6/4, 7/3, 7/4, 8/3, 8/4, 9, 11-16 are allowable over the prior art of record for at least the reason that, even though the prior art discloses optical components wherein a coating extends over a substrate and at least beyond the substrate onto a base unit supporting the substrate, the prior art fails to teach or reasonably suggest, regarding claims 3, 6/3, 7/3, 8/3, an optical component wherein the substrate region deviates from an orientation that is selectable relative to the reference by not more than 0.25 degrees, regarding claims 4, 5/4, 6/4, 7/4, 8/4, an optical component wherein all surfaces comprising the reference are parallel to one another and to the substrate region within an angular tolerance of 0.15 degrees, and regarding claims 9, 11-16, a method for fabricating an optical component, wherein an assembly device is used having a support plate being brought into contact with the substrate, and having a counterpart of the reference being into contact with the reference, with the support plate and the counterpart remaining in a rigid position relative to each other at least during the step of assembling the substrate, while the substrate and the reference are positioned with respect to each other in a manner predefined by the assembly device, as set forth by the claimed combination.

Case (US 2002/0114580) discloses a method for fabricating optical components in predetermined relation with each other, wherein a first optical module has a first optical component pre-aligned with respect to a reference feature, and subsequently the first optical module is mounted to a first predetermined location on the fixed reference. A similar procedure is followed for a second optical module (Figs. 1-2).

Response to Arguments

Applicant's arguments filed on 1/6/2004 have been fully considered but they are not persuasive.

Regarding Applicant's argument (p. 7) that Nunoshita only shows a single reference surface, the examiner respectfully disagrees and notes that the base unit 10 supporting the substrate 12 has two plane surfaces on the two sides thereof, and it reads on the language of claim 1. Furthermore, regarding the need for locating the waveguide in a specific relationship with the edge surfaces, it is noted that alignment techniques in fabricating and positioning waveguides are widely used in the semiconductor/integrated optics area.

Regarding Applicant's argument about the use of the King patent, Applicant states that there is only one reference plane surface 11 on the base unit. However, as it was identified in the Office Action of 10/8/2003, the substrate 12 is in a specific relationship with mesa-shaped reference 15, which is located on the base unit 10.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leo Boutsikaris, Ph.D.
Patent Examiner, AU 2872
March 23, 2004

A handwritten signature in black ink, appearing to be 'Leo Boutsikaris', written over the typed name and date.